



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 1000-E
UNIQUE ID NUMBER: 11RR052
COMBUSTOR: Phase5 Tiled
ENGINE TYPE: TF

BYPASS RATIO: 9.7
PRESSURE RATIO (π_{00}): 37.5
RATED THRUST (F_{00}) (kN): 279.8

REGULATORY DATA ** DATA SUPERSEDED ** SEE FOLLOWING UID FOR REVISED DATA: 12RR058

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	0.1	15.3	51.0	5.8
AS % OF ORIGINAL LIMIT	0.7	12.9	44.3	32.2
AS % OF CAEP/2 LIMIT (NO _x)			55.4	
AS % OF CAEP/4 LIMIT (NO _x)			62.1	
AS % OF CAEP/6 LIMIT (NO _x)			68.9	
AS % OF CAEP/8 LIMIT (NO _x)			78.2	

DATA STATUS

- PRE-REGULATION
x CERTIFICATION
- REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
x DEDICATED ENGINES TO PRODUCTION STANDARD
- OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
(ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
x OUT OF PRODUCTION (DATE: -)
- OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F ₀₀)	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO _x	SMOKE NUMBER
TAKE-OFF	100	0.7	2.007	0.00	0.47	39.17	3.8
CLIMB OUT	85	2.2	1.659	0.00	0.43	30.55	4.5
APPROACH	30	4.0	0.570	0.00	0.92	12.54	2.5
IDLE	7	26.0	0.222	0.09	10.63	5.06	0.6
LTO TOTAL FUEL (kg) or EMISSIONS (g)			73	33	3949	13462	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				5	5	5	5
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				0.1	14.1	48.1	5.2
SIGMA (D _p /F ₀₀ in g/kN, or SN)				0.1	3.8	0.8	2.0
RANGE (D _p /F ₀₀ in g/kN, or SN)				0-0.2	9-17.6	47.3-49.1	3-8.2

ACCESSORY LOADS

POWER EXTRACTION 0 (kW)
STAGE BLEED 0 (% CORE FLOW)

AT - POWER SETTINGS
AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.9-102.1
TEMPERATURE (K)	284.1-290.3
ABS HUMIDITY (kg/kg)	0.00432-0.00721

FUEL

SPEC	
H/C	1.89
AROM (%)	16.7

MANUFACTURER: Rolls-Royce plc
TEST ORGANIZATION: Rolls-Royce
TEST LOCATION: Derby
TEST DATES: 24/09/2009-09/06/2011

NO_x REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
x	2.3.2 d) (CAEP/6)
	2.3.2 e) (CAEP/8)

REMARKS

1. Representative of Package B engines

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)